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Challenges facing local communities in Tanzania in realising locally-managed marine areas

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ABSTRACT

This study explores how the history and process of establishing a marine protected area (MPA) under the control of the state has led to limited interest in community-based management amongst local stakeholders. The study contributes to the understanding of historical events that have discouraged the take-off and scale-up of community-based conservation approaches, such as locally-managed marine areas (LMMAs). LMMAs are being promoted increasingly as a desirable approach in marine conservation. However, there are a limited numbers of cases where such initiatives have been used as a strategy for marine management in sub-Saharan Africa, and very few operational examples of such schemes exist in the Western Indian Ocean region. Through semi-structured questionnaires, 193 community members selected randomly from 15 villages of the Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP), Mtwara district, Southern Tanzania, were interviewed about their attitudes towards efforts to promote local management and the conservation of marine resources. The study also involved 17 focus group discussions, 13 in-depth key informant interviews, participant observation, and a review of secondary information. Over 85% of the questionnaire respondents commented that there was insufficient participation by legitimate community representatives in the development of the MBREMP. Almost 90% of the respondents agreed that the management of marine areas has increased significantly, particularly in the last two decades following initiatives by the government, donors and external NGOs. However, 70% of the questionnaire responders had observed that a rapid shift from centralised to community-based management has been hindered by a lack of acceptable community rules and by communities frequently equating conservation with prohibition. Developing LMMAs in areas based on the lessons learned from MPAs could be a better alternative to developing entirely new community-managed areas; however, this can only succeed if limitations including the key principles of community participation and empowerment are addressed.

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1. Introduction

The multifaceted nature of human-induced and natural threats to global marine environments has led the scientific community to recognise the importance of an integrated approach to the management of marine and coastal resources [1]. In response, marine protected areas (MPAs) are often recommended, and adopted around the world as a management tool for marine systems [2–4]. MPAs are formally designated areas, subject to varying degrees of protection that are generally intended to maintain marine biodiversity and facilitate resource recovery and enhancement [5,6]. MPAs also play a vital role in mitigating the effects of climate change [7] and can ensure ecosystem resilience, contributing towards climate change adaptations and protecting essential ecosystem services by sustaining key ecological functions, services and resources [8]. Most notably, MPAs provide useful sites for education and research purposes [9,10]. However, MPAs are not a panacea, but are rather one management tool among many [11,12]

The implementation of protected areas in coastal areas has increased rapidly since the World Summit on Sustainable Development in Johannesburg in 2002, when the first international target of establishing a global network of MPAs by 2012 was set [13].

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Since this summit, the last decade has witnessed huge efforts to reach the additional targets that have been set, such as at the eighth meeting of the Conference of the Parties (COP) on the Convention on Biological Diversity (CBD), which stated that there should be effective conservation of at least 10% of each of the world's ecological regions by 2012 [14]. Similarly, in 2010, Parties to the CBD recommitted to a new target to effectively protect at least 17% of terrestrial areas and 10% of the world's marine and coastal ecological regions by 2020 [15]. While these are very impressive ambitions, several authors e.g. [16–19] have argued that these targets are difficult to achieve in reality.

Despite these impressive actions, the question of how MPAs can meet the CBD target and expand into areas with no or little history of traditional conservation remains. Currently, there are more than five thousand MPAs worldwide, with a total area coverage of 4.21 million km^2, encompassing 1.17% of the global ocean surface [20]. While there has been an increase in protected area coverage during the last decade, MPA development has failed to keep up with the development of protected areas in the terrestrial environment [21]. The global distribution of MPAs is both uneven and unrepresentative on multiple scales [20]. In comparison with terrestrial protected areas, MPA designation and management is complicated by the fact that many projects are still guided by top-down management, where national governments are the sole resource managers and policy makers [22]. However, this situation is changing, as revealed by an upsurge of interest in community-based natural resources management; this is intended to compensate for the low capacity of governments to implement local regulations in marine tenure [23,24].

During the last decade, a large number of initiatives to protect marine environments, some lead by governments and others driven by international donors and Non-Governmental Organisations (NGOs), have introduced a shift from state-based MPAs towards management at a local level by relevant stakeholders [25]. These initiatives have promoted either the concept of shared responsibility between governments and resource users through co-management [26], or the practice of bestowing management wholly on the community [27]. This approach has been particularly successful in the Pacific region, in countries such as Fiji, Solomon Islands, Tuvalu, and the Philippines, where numerous community-managed marine areas have been established outside of MPAs operated by the state [28]. Such areas, often referred to as locally-managed marine areas (LMMAs), can be described as community-based conservation approaches.

Over the past two decades, the LMMA concept has gained popularity as an effective alternative to state-operated MPAs [29]. Whilst LMMAs are potentially good initiatives, they can be difficult to implement, especially in locations with no history of traditional marine management. These areas need to be largely or wholly managed at a local level by the coastal communities working with other stakeholders and/or collaborative government representatives who reside, or are based, in the immediate area [30,31]. In contrast to state-operated MPAs, community participation and buy-in with LMMAs must be very high in order for the project to be a success, and this is shaped by the realities and constraints of particular places, people, and ecosystems.

Despite the importance of marine resources to community welfare, there is still slow growth in the appreciation of community-managed areas, such as LMMAs, in many countries of the Western Indian Ocean (WIO) [32]. This study attempts to determine why this is the case by examining some of the practical barriers to successful adoption of LMMAs, particularly in Tanzania. The study focuses on forces currently shaping marine conservation, especially political structures and processes, power struggles, and the distribution of the benefits of successful management [33]. Notably, the opinions of communities in Tanzania regarding a range of interests and priorities are an important consideration, and may serve as an invaluable reference for practitioners trying to implement LMMAs in similar areas in the future. Tanzania represents an important case study in LMMAs process because marine conservation can encompasses approaches involving local people in the design and establishment of MPAs [34,35]. Tanzania also possesses several attributes frequently deemed suitable for community-based conservation, with successful experience in terrestrial protected areas, in particular, the enactment of wildlife management areas [36–38]. However, until very recently, MPAs established in Tanzania have been heavily influenced by fisheries law and regulations [39,40]. Characteristically, in mainland Tanzania, MPAs are legally established in the form of marine parks (multiple uses) and marine reserves (no take areas) under the Marine Parks and Reserves Act no. 29 of 1994 [39]. Currently, there are three marine parks and 15 marine reserves, all established and recorded under the Marine Parks and Reserves Act [39,41].

Additionally, local communities are frequently directed by various authorities to complete the procedures involved in managing marine areas in a rather top-down fashion [35,42,43]. In reality, these are not local community initiatives; communities have no direct role in their establishment and often feel that these initiatives are influenced by international organisations, bringing a set of ideas that are often in contrast to those of local populations [39,42]. Furthermore, the MPA legislation does not provide any explicit relationship between government bodies, such as the Marine Parks and Reserves Unit, and the private and NGO stakeholders; in addition, MPA legislation does not stipulate nor indicate how private and NGO stakeholders could be involved in MPA management. It is interesting to note that the MPA legislation is currently under review though it is not known whether, once revised, it will accommodate community-based conservation projects that are governed by local by-laws. Presently, the governance structure of MPAs does not allow greater participation, power sharing and decision making by non-governmental stakeholders, including the private sector [40]. This has caused conflict and, in some instances, strong resistance and deep community hostility towards the concept of protecting marine areas, such as in villages on the western edge of the Mnazi Bay-Ruvuma Estuary Marine Park (MBREMP) in southern Tanzania [44]. Similarly, there was an immediate negative reaction to the initial initiative to create the marine park by the residents around this area, with evictions and the loss of livelihoods forming the basis for most of the resentment towards the protected area [45]. It is apparent in these examples that there were critical issues that were either overlooked or ignored, which could have provided an insight into some of the demographic, cultural, and social factors that influence community acceptance or non-acceptance of MPAs. While there may be many opportunities to learn from such existing conservation activities, resistance and conflicts can inhibit the successful and widespread adoption of community-based conservation measures.

2. Materials and methods

2.1. Study site

This study was conducted in the Mnazi Bay-Ruvuma Estuary Marine Park, a multi-use MPA situated in the Mtwara rural district, on Tanzania's southern border with Mozambique. The MBREMP was established in 2000 and encompasses an area of 650 km^2, of which 220 km^2 is land [46]. The remaining 430 km^2 includes mangrove forests, islands, and extensive coral reefs [47]. The population of the MBREMP has recently been estimated to be approximately 40,000 people, living in 17 villages [48]. The

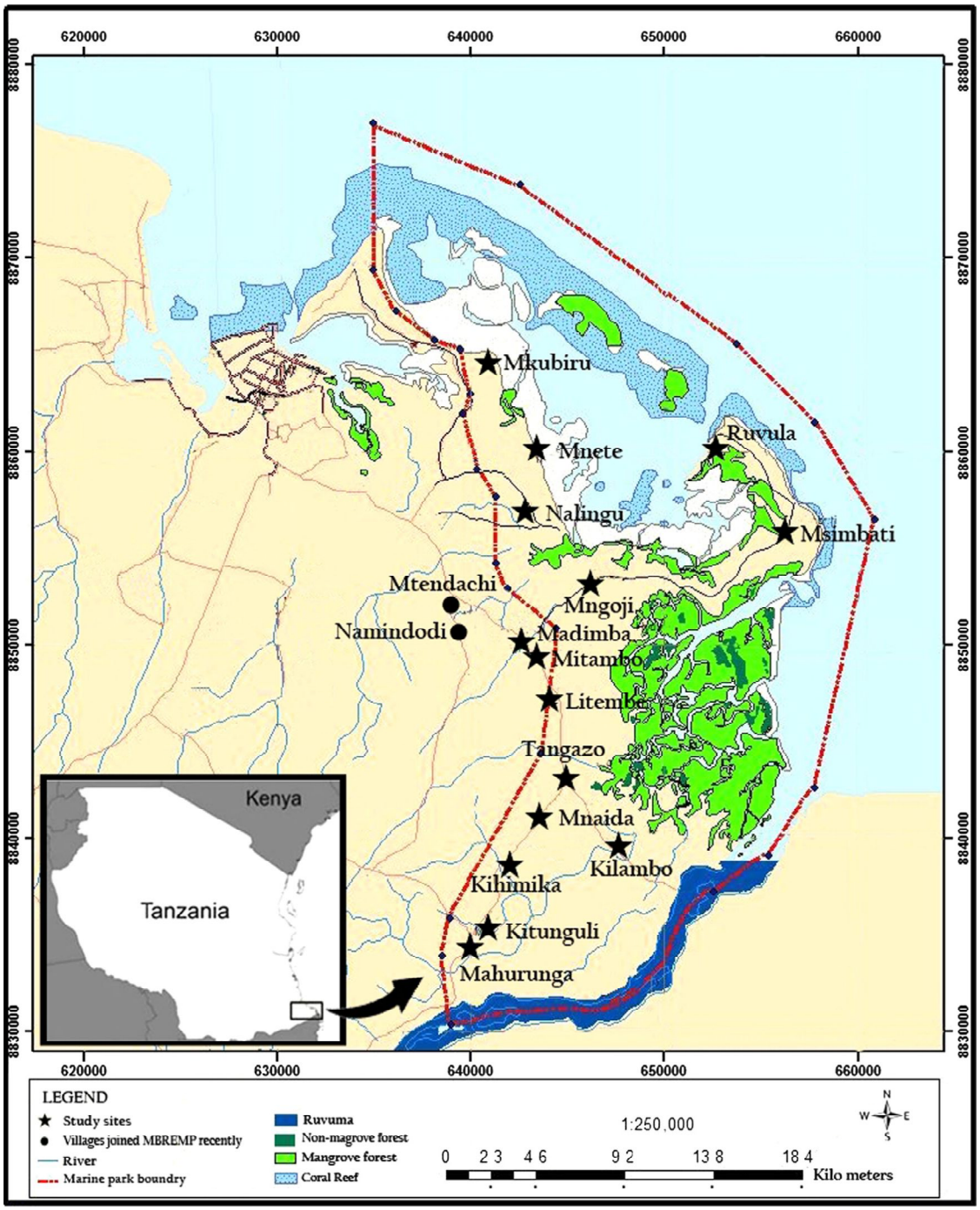


Fig. 1. Map of the study area.

MBREMP is boarded by Indian Ocean to the east, Mozambique to the south, Mtwara municipal to the north, and several hinterland villages of Mtwara district to the west [47,49]. The present study interviewed selected residents from 15 villages (Fig. 1). Some of these villages, in particular Msimbati, Mngoji, Litembe, and Kilambo, have been very cooperative in terms of participating and supporting conservation activities, while others, Nalingu and Mkubiru in particular, resisted conservation efforts for many years. However, these two villages have recently dropped their opposition and now cooperate with the MBREMP authorities [44]. Interviews were not conducted in Namindondi and Mtendachi villages, which have only very recently been incorporated within the MBREMP jurisdiction.

Unlike Madagascar and Kenya, which have established and proven LMMAs, locally managed programmes for conserving marine resources along the Tanzanian coast have previously taken the forms of collaboratively managed areas in Tanga, a community-based fisheries management programme in Bagamoyo, no-take areas in Fumba (Zanzibar), and the Rufiji, Mafia and Kilwa seascape programme [50,51]. Many of these examples were set-up as short-term projects focused on resource governance and, consequently, failed to plan for sufficient time to attain long-term cooperation with local communities.

However, the MBREMP is unique because it includes broad-scale socio-ecological aspects and has no foreseeable conclusion, unlike the examples mentioned above [46]. Moreover, it comprises

more than 9500 households that are located in the designated conservation area [52]. Anecdotal evidence from the accounts of elderly people living in the MBREMP suggests that there has been an absence of sound community rules in local societies that would result in marine areas being managed sustainably. Arguably, for many decades this area has not been community managed in response to concerns about local marine biodiversity. For many villagers, the move to increase the scale of marine management has been interpreted as a backlash against local livelihoods and social identity. As a result, overt and sometimes violent protests preventing MBREMP managers from enforcing regulations have erupted. This has prevented the wider spread of marine management areas. Consequently, the MBREMP provides an illustrative case to examine how and why a state-based MPA could have little influence to mobilise community to prioritise conservation as one of the most important agenda in their social life

Although there may be concerted efforts by donors and the Tanzanian government to support forms of community-based conservation in the MBREMP, these can be predominantly characterised by the rise in activities aimed at providing local communities with benefits from protected areas [53]. Additionally, while the conditions imposed by donor agencies and the government on conservation funding generally stipulate some form of community involvement in conservation projects [45,54], in the general, there have been no changes in conservation ideology and policy to shift the focus away from state dominance towards a 'community-based' model. Most importantly, within the MBREMP, and on a larger scale in Tanzania, the enactment of policies and legislation designed to support community-managed marine areas has not occurred; this has resulted in critical challenges to implementing both legal- and community-based arrangements for marine management [39]. In addition, community conservation in Tanzania is heavily influenced by ideas of sustainable utilisation of resources, an idea with deep historical roots in colonial environmental management schemes [54]. Local communities in the MBREMP feel that their involvement in the general management plan of the protected area has resulted in reduced access to prime fishing areas. The MBREMP, therefore, may be useful as a case study to assess the category of barriers that potentially prevent communities from switching from top-down to bottom-up management of their resources. This study is set against the backdrop of the historical development of MPAs in Tanzania and the country's contemporary political context, as well as whether local communities in that area wanted to protect marine environments.

2.2. Data collection

This study was based on primary and secondary data collected between March 2012 and January 2013. Secondary data collection involved the collation of information from peer-reviewed literature, grey literature, and policy documents on MPAs and locally based management programmes for natural resources. The peer-reviewed materials selected were analysed in order to: (1) determine the mechanisms and processes that led to achieving locally based management of natural resources, (2) assess locally based natural-resource management activities that are aimed at supporting community-based management of coastal zones, (3) understand the relationship between protected areas and local communities, (4) examine political struggles at a local level that result from the establishment of protected areas, and (5) identify challenges and shortcomings in developing community-managed areas. For primary data collection, a generative research methodology [55] was selected. Data were collected through semi-structured interviews, focus group discussions, key informant interviews, and participant observation.

Semi-structured interviews were conducted on a random sample of 193 households in 15 villages of the MBREMP to gather information on the participants involved in its creation and the people in charge of the process. In addition, the semi-structured interviews collected information on the perceptions of respondents on various issues related to the designation and establishment of MPAs. These included, community involvement in negotiating the objectives of the park and the subsequent implementation and monitoring of the project, political commitment, and the community's understanding of legislation that governs such protected areas. The interviews were kept open to allow respondents to provide any additional information they thought was important and to allow the exploration of topics that were not anticipated during the planning of the study. Moreover, a total of 17 focus group discussions were held with local community members, village leaders, village liaison committee members, and other people with a strong influence in their societies. Participants from each study village were selected after consulting the MBREMP managers, NGO representatives, and village leaders, and were chosen based on their participation (active or inactive), interest in marine conservation, and perspectives on marine conservation. Attendance during focus group discussions ranged from eight to 12 people, and the discussion time ranged from 2 to 3 h. The main questions concerned the role of the community in the conservation of marine resources, and whether a formal mechanism (including supportive institutional frameworks) for stakeholder participation in designing and establishing the MBREMP existed. Participants were also asked to describe their experiences and the range of factors related to their participation, including the perceived social injustice the designated protected area can precipitate, and which power structures underpin and drive community-based conservation.

The responses from semi-structured interviews were considered alongside information generated from 15 key informants (three Ward Executive Officers from Madimba, Mahurunga, and Ziwani wards, three Ward Councillors from Madimba, Mahurunga, and Ziwani, two Divisional Secretaries from Ziwani and Kitaya, four MBREMP staff, and three district fisheries officials). Moreover, the first author made personal observations of conservation activities in sea-front and mangrove-based villages within MBREMP because of their central role in the biodiversity composition of the study site.

The primary data collected were qualitative. The various views of respondents recorded in interviews were transcribed verbatim in Kiswahili language. Only the information that was important for analysis was translated into English from the interview transcripts. Through iterative analyses, a common set of codes describing patterns observed in the data were developed [56,57]. New codes were defined in relation to existing codes. The coded segments were then collated on paper by the second and third author, and the segments were then compared for common themes (e.g. participation, resistance, evictions, legislation, protected area, and village liaison committees) with explanatory statements emerging from the respondents. A number of such statements are represented directly as quotes in this paper, while for codes, frequencies of responses were analysed through SPSS 20 to assess trends among the study respondents.

3. Results

3.1. The process and motives for the establishment of the MBREMP

Discussions concerning the protection of the marine environment in southern Tanzania, particularly in Mtwara and Lindi regions, started in the 1990s [58]. Between 1994 and 1998, an

Table 1
Summary of events in the establishment of the MBREMP.
Sources: [28,37,38], focus group discussions and key informant interviews.

Date	Event	Major milestone
1994	Initiation of the first marine environment protection programme (MEPP) following a meeting in Sudi village to discuss problems related to the marine environment. The meeting was attended by 40 fishermen from 12 villages, four local government officials, police from Kilwa, Lindi and Mtwara district and two consultants from RIPS	Formation of the Sudi committee (which gave rise to SHIRIKISHO); dynamite patrols; introduction of seaweed farming with financial support from the RIPS
1994–1999	Studies initiated by the University of Dar es salaam (Institute of Marine Science), in collaboration with Frontier-Tanzania to provide baseline information for development of MPA in Mtwara district	Biophysical and socio-economic data were collected
1996	A second workshop with 80 participants was held in Msimbati village to review development since the Sudi workshop. Three members of Parliament, in addition to councillors and senior police officers attended	Decision to expand the MEPP and aim to formulate and implement community-based coastal zone management for Kilwa, Lindi and Mtwara districts. MEPP was facilitated by RIPS with technical support from Frontier-Tanzania
1998–1999	A series of discussions in Mtwara district concerning the need to protect marine habitats and improve fisheries management	A need to accelerate the establishment of a MPA
1998	A constitution and conditions for membership for SHIRIKISHO (which started as a committee of 12 people) were prepared and registration as an NGO was applied for.	Formal registration of SHIRIKISHO as an NGO, and its title became 'The Southern Zone Confederation for Protection of the Marine Environment'
1999	Mtwara declaration	District authorities at both governmental and civil society level agreed to the creation of a Marine National Park in the Mnazi Bay area
2000	Agreement was approved by the regional and then central government after proposal by the Ministry of Natural Resources and Tourism (MNRT) to Parliament under the Marine Parks and Reserves legislation framework	MBREMP was recognised for its biodiversity value and gazetted as Tanzania's second MPA Appointment of a Park Warden
2002	Management structure of MBREMP in place and the Park started full operation under the financial grant of GEF/UNDP project MBREMP initiated a series of meetings, conservation forums and workshops in villages to raise awareness and made plans for the enactment of marine park committees in villages	Members of staff were appointed. Technical advisor was hired by IUCN EARO. Village liaison committees were enacted in every village except Mkubiru and Nalingu Opposition against the marine park started to manifest Park managers assured that community participation would be legally mandated within the marine park and park would offer jobs through tourism and loans to improve fishing activities
2003	The first marine park advisory committee was formed	Local communities became formally involved in deliberations over the MBREMP through their representatives in the advisory committee
2003–4	Institutionalisation of community participation by facilitating local community to develop their village environment management plans (VEMP)	Draft VEMPs developed for all villages except Nalingu and Mkubiru
2004	Nalingu village resorted to overt forms of resistance to implementation of MBREMP activities	Resistance spread to Mkubiru as local community worried about potential restrictions on their fishing practices. Other villages, especially Msimbati, acted in covert ways to instil resistance in other villages Fears spread that MBREMP will prevent local community access to fishing and other marine resources
2003–5	Biophysical and socio-economic assessments were carried out in MBREMP	Documents produced based on the knowledge base of marine biodiversity and socio-economic status of MBREMP
2005	Workshops were held with stakeholders within the park, including national government officials, representatives of international NGOs, academics, district government officials, and village leaders of several villages to develop management plan of MBREMP	Management plan document was produced and was sent to the Ministry for approval
2006	MBREMP residents were promised help in fishing activities and alternative income activities	The concept of 'marine park' received less support, participation was vague enough that all park stakeholders ostensibly agree to it

alarming increase in dynamite fishing led some community members to collaborate with a community pressure group called SHIRIKISHO (which later became an NGO) in order to negotiate and liaise with country authorities to stop dynamite-fishing and discuss the future of fishing activities [59]. The initiative became viewed as being particularly relevant after fisheries biologists from the Institute of Marine Sciences (IMS, University of Dar es salaam) and Frontier-Tanzania noticed declining fishing catches and widespread destruction of habitats, especially coral reefs and sea grass beds [45,46].

The interest in forming an MPA arose from a series of meetings, the majority of which were moderated by natural resources and community development practitioners from the district, with facilitation from the Rural Integrated Project Support (RIPS) Programme [59]. The sequence and timing of events in the development of the MBREMP is shown in Table 1.

The process of forming a MPA took the course of participatory planning. However, this 'participatory' approach was rather ambiguous, as highlighted in nearly two-thirds of the focus group meetings held; no other avenues of management except a state-based MPA were considered. An overwhelming majority of respondents in interviews held the view that there was insufficient social dialogue and collective agreement in order to persuade them of the benefits and to raise their awareness before the MPA was actually established. An area of the southern Mtwara coast, incorporating 11 villages, was proposed for the MBREMP [58]. As explained in one focus group discussion, this form of community participation became the model for the implementation of the MBREMP's activities.

3.2. Local communities and the process of developing the MBREMP

The degree to which community members were allowed to participate in the initial stages of the development of the MBREMP between 1999 and 2004 was highly criticised during interviews and focus group discussions. When asked if local communities took part in meetings called to develop the MBREMP, only 11% of the respondents answered affirmatively, while 73% answered negatively, and the rest did not answer or were not sure. Some respondents (45%) stated the view that representatives from certain villages (especially the riverine villages Mahurunga, Kitunguli, and Kihimika) that participated in those meetings had limited knowledge of the marine environment. As a result, their participation was considered illegitimate. Many key informants appeared to have no understanding of why the MBREMP jurisdiction included non-fishing villages, especially those mentioned above.

Over 85% of respondents perceived that the participation of local community members in the whole process of MBREMP development was limited to the attendance of public meetings or discussions held only at the village level. There was insufficient representation by local communities in most of the meetings held at district level, as emphasised during a focus group discussion in Tangazo village, "*We didn't know the deliberations of the meetings held in Mtwara town as none of us took part in it, we got information that our area is a park [MBREMP].*" Essentially, most participants in all focus group discussions saw these district meetings as part of the MPA and not representative of the villages. More specifically, they commented that they were somewhat afraid that their interests could not be represented appropriately in those meetings. As noted in Litembe village's focus group discussion, there were inconsistencies and power differences between local community members and officials. For instance, none of the local community members produced an agenda for the future of the proposed MPA and none were involved in the interpretation of the proposed MPA. Many respondents therefore perceived that discussions were largely marred by the dominance of certain groups, including district officials and representatives of international conservation agencies in particular.

Information from key informants revealed that some villages, such as Msimbati and Mngoji, were prioritised in meetings and discussions concerning the development of the MBREMP. This was perceived by other villages as restricting their opportunities to exercise power to manage their resources in the proposed MPA. There was a general agreement from almost all respondents during focus group discussions that the development progress of the MBREMP lacked adequate involvement of people at the village level and was fast-tracked because of the limited resources available to maintain preparatory dialogues with communities. This view was supported by nearly two-thirds of key informants interviewed, who said that the MBREMP was initiated from above and it attempted to bring local communities into marine conservation largely through promises of socio-economic benefits.

3.3. Experiences of local communities with management of marine resources

There is sparse documented historical background on the traditional management of marine areas in Tanzania, specifically in the Mtwara district. The majority of people interviewed (70%) did not know whether any form of management regime existed, such as closed fishing areas in the marine environment. However, 30% were aware of traditional sacred areas, where nobody would fish. People also spoke of days where fishing was curtailed for religious and/or ritual purposes. Only a small portion of respondents (14%) had heard specifically of the word conservation ('*uhifadhi*' in Swahili), and if they had they were unable to explain its meaning. There was almost unanimous agreement (90%) among the people interviewed that there has been a rise in marine conservation projects propelled by donor agencies and external NGOs.

Lack of experience of local communities with environmental management was revealed during focus group discussions and interviews. During focus group discussions, most participants showed that their understanding of environmental management or conservation as an issue stemmed from the protection of forests and wildlife. From this perspective, they understood conservation to be associated with the harsh exclusion of populations from protected areas. Unfortunately, a substantial proportion of respondents (43%) linked the conservation of forests and wildlife to the exclusion of indigenous communities from their land during the programme of 'villagerization' in the 1960s and 1970s [54], evictions of pastoralists in Ihefu/Mbarali watershed and Mkomazi game reserve [60], and more recently eviction of Maasai from Tarangire National Park [61] and Ngorongoro Conservation Area. Following that experience, people expressed little interest in conservation projects. Most of the key informants stated openly that marine management did not have roots among the communities of the Mtwara district. One informant emphasised that, "*There was not even a small community conservation area in the whole of Mtwara district; many of these initiatives in marine environment are quite recent.*"

This sense of inexperience and lack of knowledge of the importance of managing the marine environment was echoed throughout interviews in all study villages, either in detail or by denial of the whole phenomena of marine conservation. Such sentiments were mostly owing to the lack of traditional management regimes, but were also specifically related to restrictions people had heard about in terrestrial protected areas, as was highlighted by one interviewee, "*Conservation is dangerous to my life…[I]you are forceful evicted, no compensation, restricted to fish, your fishing gears confiscated.*"

3.4. Building consensus in developing the MBREMP

During the initial stages of development of the MBREMP, the stakeholder community in question was not adequately identified and no comprehensive socio-economic assessments were carried out [45]. Most of the participants in the focus group discussions believed that there was no inclusion of existing (if any) examples of coherent community management techniques. Rather, the initiative was driven by the adoption of a western approach to managing marine areas, i.e. MPAs. Interviews revealed mixed concessions among key parties involved in raising awareness about the development of the MBREMP. Nearly 40% of respondents reported that they were confused about the truth behind the proposed MPA and how they would benefit. They cited being told to reject the MPA by some district officials who were in fact part of the team developing the MBREMP, but who appeared to have ulterior motives. As quoted by one key informant, "*There was no effective feedback between the district officials and the people leading the MPA process because the officials were suspicious that they could lose powers and benefits they previously enjoyed as the area will be under a different management authority.*"

Most of the key informants said that the issues of power differences and participation were not addressed, and other important attributes such as existing social networks and interrelations among stakeholders were neglected. The issue of community participation was used as the main point of entry to win support from local people. However, this, as was explained during various focus group discussions held, resorted into a myriad of 'promises', e.g. fishing grants, provision of fishing equipment and financial capital, and provision of alternative income activities such as small businesses, that could be successful within a relatively short period of time. Consequently, people were led to believe that they would receive short-term benefits rather than a process of long-term benefits.

The size of the MBREMP was expressed as one of the issues that was hard to reach a consensus on by 90% of the respondents, since the area is large and encompasses many different villages. Furthermore, some villages, such as Mitambo and Madimba, and very recently Namindondi and Mtendachi, were said to have expressed their interest in being in the MBREMP. This was despite the fact that they had no socio-ecological criteria suitable for conservation purposes, and that it was not very clear why those villages merit marine protection status on ecological grounds, as emphasised by many key informants. This led to reduced trust and commitment from other villages, especially Msimbati, Mngoji, Nalingu, and Mkubiru. These villages, according to majority of key informants, were sceptical that those villages seeking to be included in the MBREMP would increase competition for their resources because they would be allowed to freely use fishing resources not belonging to their traditional boundaries.

3.5. Implementation of the MBREMP activities

The MBREMP was officially established in 2000 and began operating two years later [62]. The time lag between announcement and implementation of the MBREMP was highlighted by most of the respondents (92%) to have contributed to the loss of goodwill from the villages. Discussions with various key informants revealed that there was large-scale interference from project partners: Marine Parks and Reserves Unit, IUCN Eastern Africa Marine Programme, UNDP/GEF, and the French Global Environmental Facility (FFEM) – in the implementation of the MBREMP project. There was a considerable delay in the availability of funds, which apparently resulted in failure to initiate the proposed activities; consequently, the local community did not realise the benefits as quickly as they were promised during the campaigns to raise awareness and in the preparatory meetings [45]. Interestingly, a particular example, highlighted by many key informants, entailed concerns and dissatisfaction by the Msimbati village government over the modalities of sharing the revenue collected from the entry gate that is located within the village premises.

In recent years, however, a few instances of environmental, political and personal factors became apparent in local residents cultural practices; probably as expressed by 68% of respondents as a residual effects of the establishment of MBREMP. Majority of the respondents' opinion explain how false and misunderstood information about the implementation of conservation activities was received by most of the households in some villages, Nalingu village in particular. This eventually led to negatively cooperation and interactions among and between households. Nearly two-thirds of key informants interviewed highlighted that many households in Nalingu allegedly fanned the conservation threat by propagating that the establishment of a marine park would result in them being expatriated. They did this through strong opposition to any of the process related to the MBREMP in their village. In a short while, their move spread to the nearby village of Mkubiru and as a result, the MBREMP was not able to implement its activities in those villages from 2002 to 2009. Ultimately, opposition to conservation spearheaded mostly by individuals based in Nalingu village disunited households not only in Nalingu village but in almost all sea front villages (Mkubiru, Mngoji and Msimbati) delineated within the MBREMP jurisdiction. This residual of the impacts arising due to implementation of the MBREMP activities is visible in attempts by households to limit reciprocity and trust between them. This opinion was also shared by participants of focus group discussion in Mkubiru village, as summed up:

> "*So many people were scared… those supporting MBREMP were seen as enemies and being robbed of their dignity. Some villagers there [Nalingu] and even here [Mkubiru] were no longer participating together in weddings or funerals because of animosity between those who support the park [MBREMP] and those who are against it. Divisions affected not only families and households, but the entire village, and social interactions between people of different positions became limited and suspicious Efforts to mediate the conflict was futile as anti-conservation kept saying hatutaki [we don't want] wherever opportunity for negotiations was available. And you know in such circumstances, people started gradually reducing cooperating with each other.*"

Fifty-six per cent of respondents claimed that the tension created by the different views concerning the support of the MBREMP meant that traditional institutions, which sometimes assisted bringing people together in community based activities, were at risk

Since its activities commenced, the MBREMP has strived to perform in the management of the marine environment [48,52,63]. However, these efforts are seldom supported by local NGOs operating in Mtwara district [48]. As highlighted during a discussion with district fisheries officials, the MBREMP could have succeeded in instilling community-based conservation if other parties, such as NGOs working on environmental issues in the district, had effectively co-operated. On the contrary, those NGOs seem to treat the MBREMP as a donor, often requesting funding.

3.6. Barriers to implementation of locally – managed marine areas

A number of barriers that disrupt the adoption and implementation of locally-managed marine areas were compiled based on a retrospective analysis of the development of the MBREMP by the authors. According to the interviews and discussions, the general

Table 2
Barriers to the implementation of marine managed areas in Tanzania.
Source: unpublished information and interviews.

Barrier category	Example
Policy	Existing policies, especially those concerning marine environments, lack regulations specific for CBC
	Lack of political will among key stakeholders that resulted in numerous parties actually resisting the MBREMP
Governance and institutional	Management of MPAs in Tanzania remains largely focused on prohibition and restrictions, rather than maintaining an acceptable level of resource utilisation. Thus, management framework is far to be emulating people to CBC
	Knowledge of CBC is concentrated within higher levels of government, especially at the ministerial level; at lower levels, such as district, such knowledge is scant, and even more so more at local levels
Behaviour	Local communities place priority on short-term gains and make decisions contrary to their long-term benefits
History of traditional management	Marine conservation lacks a long history and is linked to negative connotations from terrestrial conservation
Cultural institutions	There have been no long-standing cultural institutions for managing marine resources that could curtail fishing for religious purposes
Management plan	Developed through participatory process, but written in English and translation into Swahili has not been finalised
Power dynamics	Some community members were pleased with the efforts of MBREMP
	Dissatisfaction with MBREMP started to grow in other community members, even leading to resistance to MBREMP activities
Knowledge base	Lack of in-depth socio-economic assessment that could help to realise the relationship between conservation and livelihoods of local communities
Linkage with private sector, government and NGOs	The state still retains ownership and responsibility of marine resources
	Lack of private sectors in marine conservation involving local communities in some of the operations

opinion was that conservation groups and local communities alike could be impeded by one barrier, or the interaction of multiple barriers, in realising the concept of the community based conservation. Table 2 summarises some of the barriers identified.

In Tanzania, marine conservation is guided by the Marine Parks and Reserves Act of 1994. Conservation outside protected areas is not bound to any formal rules or enforcement mechanisms, which is crucial in motivating local communities [39]. Meanwhile, efforts towards establishing national rules and voluntary contributions to fund marine conservation are still lacking. Currently, smaller projects that could be used as model programmes do not pool their funding and expertise.

4. Discussion

The findings of this study illustrate a framework where a state-operated MPA has failed to reconcile community interests with conservation objectives from the outset. Retrospective analysis of the involvement and participation of local communities in the process to establish the MBREMP revealed failures in conceptualisation and subsequent implementation. This has wide implications for the potential to teach and encourage methods of resource management at the community level [64,65]. The MBREMP was conceived as a purely state-based MPA, in an area with no historical tradition of marine management by local communities. Its establishment process was largely top-down, though its goal was to incorporate conservation into local communities. Despite the conservation rhetoric in the name of community participation and involvement, based on the prevailing situation, the overall process could be viewed as a belated attempt to involve the local community. In other areas of the world, such as the Philippines [66] and the Pacific region [67], increases in the creation of MPAs appear to have been encouraged by locally-managed marine areas (a community-based conservation initiative), which reflects the efforts of local communities to protect their marine areas, backed up by customary marine tenure practices. However, this is not the predominant situation in the case of this study, where critical elements and institutions that could propel a community to become involved in establishing and managing marine areas are not in place.

The combined effects of poor community involvement in the decision making process, slow rate of implementation, and poor interpretation of conservation policies, can adversely affect the success of activities related to conservation, and may affect the rate at which conservation strategies can be scaled up. However, in order for conservation strategies to succeed and for programmes to be scaled up, governments and their partners must address a number of constraints. These include, moving more vigorously to continuous capacity building and to community empowerment, as well as reducing inequities and disincentives for conservation at a broader political, economic, and institutional level [68]. Consequently, this may lead to the implementation of policies and concepts that are consistent with community-based conservation, such as LMMAs. It appears that the MBREMP was implemented too quickly, without extensive experience with community-level negotiations, collaborative processes, and deep social and ecological knowledge of the villages involved. This could also apply to Mafia Island Marine Park (MIMP), the first MPA in Tanzania created in 1995 [43,69]. In MIMP, a majority of community members perceived the park to be another type of state-protected area, introducing restrictions to local livelihoods. This notion increasingly contributed to a loss of momentum in engaging local communities in conservation [70]. This adds to the difficulties associated with the adoption of community-based marine managed areas. The MBREMP has therefore, not produced a working example of a community-based conservation approach in an environment that has been characterised by a lack of community-based initiatives for the management of natural resources.

Whilst our findings reveal that blurred participation and involvement by local communities can obstruct conservation efforts, the absence of harmonised polices and institutional frameworks could also hinder these efforts. In the case of the MBREMP for instance, the legislative framework for MPAs calls for devolution, but the conventional approach to developing protected areas involves prohibitions and restrictions on fishing and other resource use [71], thereby limiting local incentives and the build-up of support for conservation. Faced with recurrent conflicts with local communities over regulations and prohibitions on resource use and control, the MBREMP has started to develop more grassroots approaches to community-based conservation [44,48]. This model largely concentrates on providing fishing grants, fishing gear exchange programmes, and the development of alternative income activities [44]; however, most of these are perceived by local communities as 'handouts'. So far, no positive contact has been made with influential people in Mtwara district, and this is vital to the introduction of the idea of marine conservation. Various studies of community-based conservation have shown that the role played by a handful of key individuals and organisations [64] within a proposed framework [32] is indispensable in promoting this concept.

The opinions expressed by local communities as to the origin of MPAs, and the MBREMP in particular, were pessimistic with regard to its sustainability. With negative attitudes towards terrestrial conservation, especially of wildlife and forestry in Tanzania [72], communities perceived these initiatives to be project-driven on a short-term basis. Failure to replicate or expand these initiatives has not provided a favourable environment for the development of community-based conservation, and thus it has not yet become well established in Tanzania. As noted in previous studies [32,73], consideration of the conditions that may help in understanding the level of interaction of community institutions and participation levels among stakeholders within and across communities, are a prerequisite to trigger successful community-based initiatives.

The situation in the MBREMP presents results that strongly contrast the best practices that could be used to enhance community-based conservation in the form of LMMAs. Scientific reports and anecdotal evidence on resources show that marine biodiversity has increased since the establishment of MBREMP [65]. However, despite this achievement, the community is still unwilling to invest in management measures that they view as not providing tangible benefits to their daily lives [44]. For example, there are only a few incidences where community-trained guides (commonly called honorary rangers) would arrange patrols themselves without income from the MBREMP in the form of an allowance. Bylaws enacted by communities related to conservation projects under the lead of village liaison committees and passed by village assembly are often violated. As a result, trust between communities and the government have fluctuated, with each group blaming the other. In order to ensure widespread acceptance of MPAs, and eventually a rise in community-based initiatives, both short- and long-term tangible benefits must be apparent [65,74].

While the concept of LMMAs is on the rise, the case study of the MBREMP demonstrates that previous negative trends in environmental conservation, and the absence of any sign of action to reverse them, has unleashed a tide of disillusionment concerning community-based conservation within local communities. The fundamental barriers to the adoption of LMMA initiatives and activities in Tanzania lie in the historical legacy of centralisation, and the resultant institutional incentives within the bureaucracy to maintain control over valuable resources [75]. Based on our analysis, there is a need to review the required conditions in order to promote more meaningful local involvement by private sector organisations and NGOs in managing marine areas. This is necessary in order to prevent backlash against community-based approaches. This highlights a significant problem with conservation initiatives relying on top-down approaches, which can result in a failure to win full support of local communities to manage their natural resources and environment [71]. If the MBREMP is to realise its goal of becoming a true model of community-based conservation in nearby areas, the approach must be endogenous to the communities [24]; failure to take such an approach, risks creating unfulfilled expectations, and a potential loss of credibility among locals for community-based conservation, a potentially valuable tool in conservation.

5. Conclusion

The MBREMP provides one case study of a coastal conservation project in the WIO region. However, it is not an anomaly and fits into the larger global trend of marine conservation projects with the aim of community participation and empowerment that fail to actually deviate from the top-down model of conservation [68,74]. As observed in this study, prior experience of traditional management conservation practices (e.g. closing fishing seasons) might influence the perceptions of local communities, in turn influencing their responses towards the issues of a community-based conservation approaches, such as the LMMA concept. The conceptualisation and development of the MBREMP look like an attempt to bring community-participation processes into a mould that is congruent with the 'narratives' many donors and international NGOs subscribe to. This does not mean that the MBREMP in particular is a mess, but it affirms the value of missed meaningful engagement of communities at the earliest opportunity when establishing MPAs. While Tanzania has been relatively successful in promoting state-based MPAs, community-based MPAs, in the form of LMMAs, have not been successful. To effectively develop LMMAs, it is necessary to identify and address the limitations created by top-down management schemes [32], as observed in the case of the MBREMP.

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